[0016] The boundaries of the control areas may be hidden from view and may be revealed on the touchscreen in response to a user input. Either a stylus or a finger of a user may be pressed against the touchscreen to select the one navigational control area. The image may include a television program grid of an electronic program guide (EPG) including a plurality of adjacent program windows. The selection of the one navigational control area may cause a specific program window adjacent to a previously highlighted program window to be highlighted for possible selection in accordance with the executed navigational command. The image may be navigated to play a game.

[0017] The apparatus includes the partitioned touchscreen and a transmitter for transmitting the navigational command associated with the selected navigational control area to the processor. The apparatus may be an infrared (IR) consumer electronic device. The processor may be located in a set-top box (STB) and the display screen may be a television in communication with the STB.

BRIEF DESCRIPTION OF THE DRAWINGS

[0018] The following detailed description of preferred embodiments of the present invention would be better understood when read in conjunction with the appended drawings. For the purpose of illustrating the present invention, there are shown in the drawings embodiments which are presently preferred. However, the present invention is not limited to the precise arrangements and instrumentalities shown. In the drawings:

[0019] **FIG. 1** shows a conventional two-screen digital cable TV system;

[0020] **FIG. 2** shows a graphical user interface on the display of an auxiliary display device in accordance with the present invention;

[0021] **FIG. 3** shows a system for selecting and processing commands used to navigate an image viewed on a display screen in accordance with the present invention;

[0022] **FIGS. 4A, 4B** and 4C, taken together, show an example of how an image viewed on a display screen is navigated in accordance with the present invention; and

[0023] **FIG. 5** shows a high-level functional flowchart including steps implemented by the apparatus shown in **FIGS. 2 and 3**.

DETAILED DESCRIPTION OF THE INVENTION

[0024] **FIG. 2** shows an auxiliary display device **200** operating in accordance with a preferred embodiment of the present invention. The auxiliary display device **200** includes a touchscreen (touch screen) **205**, a processor **215**, an application program **225** running on the processor **215**, and a transmitter **245**. The auxiliary display device **200** is used for navigating an image viewed on a display screen.

[0025] A basic touchscreen has three components, a sensor, a controller, and a driver. A touchscreen sensor is a clear panel that fits over the display of the auxiliary display device. A software driver allows the touchscreen to interface with an operating system by translating touch events detected by the touchscreen sensor into navigational commands. A touchscreen controller processes signals received from the touchscreen sensor. Several types of touchscreen technologies are presently used:

[0026] 1. Resistive;

[0027] 2. Surface acoustic wave; and

[0028] 3. Capacitive.

[0029] A resistive touchscreen consists of glass or acrylic panel that is coated with electrically conductive and resistive layers. The thin layers are separated by invisible separator dots. When operating, an electrical current moves through the touchscreen. When pressure is applied to the screen by a finger or stylus, the layers are pressed together, causing a change in the electrical current and a touch event to be registered.

[0030] Surface acoustic wave technology is based on sending acoustic waves across a clear glass panel with a series of transducers and reflectors. When a finger or stylus touches the screen, the waves are absorbed, causing a touch event to be registered.

[0031] A capacitive touchscreen consists of a glass panel with a capacitive (charge storing) material coating its surface. Circuits located at corners of the screen measure the capacitance of a person touching the screen. Frequency changes are measured to determine the X and Y coordinates of the touch event.

[0032] The application program **225** partitions the touchscreen **205** into a plurality of navigational control areas **210**, **220**, **230**, **240**, **250**, **260**, **270**, **280** and at least one entry control area **290**. Each navigational area is associated with a different navigational command. Navigational control area **210** is associated with an "up" navigational command. Navigational control area **220** is associated with a "down" navigational command. Navigational control area **230** is associated with a "left" navigational command. Navigational control area **240** is associated with an "right" navigational command. Navigational control area **250** is associated with an "up & left" navigational command. Navigational control area **260** is associated with a "down & left" navigational command. Navigational control area **270** is associated with an "up & right" navigational command. Navigational control area **280** is associated with a "down & right" navigational command. A stylus or a user's finger is pressed against the touchscreen **205** to select different navigational control areas, even while an application unrelated to the image to be navigated is currently displayed on the touchscreen **205**. The touchscreen **205** does not display the image that is being navigated.

[0033] **FIG. 3** shows an example of a system **300** that implements the present invention. The system **300** includes the auxiliary display device **200**, a display control device (e.g., set-top box (STB)) **305** and an image display screen **320** (e.g., a television). Display control device **305** includes a receiver **310** and a processor **315**. The processor **315** receives navigational commands from the auxiliary display device **200** and controls an image viewed on the display screen **320**. When a user selects a navigational control area on touchscreen **205**, a navigational command associated with the selected navigational control area is generated or retrieved from a memory (not shown) by processor **215** and forwarded to transmitter **245** for transmission over either a wired or wireless medium. Receiver **310** in display control